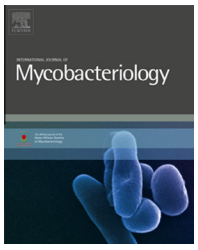
HOSTED BY

ELSEVIER

Available at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/IJMYCO



Detection of an integrase gene in clinical isolates of *Mycobacterium tuberculosis*

M. Arjomandzadegan *, *A. Ahmadi*, *F. Salehi*, *S. Falaht*

Tuberculosis and Pediatric Infectious Research Center and Department of Microbiology, Arak University of Medical Sciences, Arak, Iran

ARTICLE INFO

Article history:
Received 20 November 2014
Accepted 23 November 2014
Available online 6 January 2015

Keywords:
Mycobacterium tuberculosis
Clinical isolates
Integrase gene

ABSTRACT

Introduction: Drug resistance in *Mycobacterium tuberculosis* (MTB) is caused by many mechanisms. Integrons are genetic units characterized by their ability to capture and incorporate bacterial genomes by recombination and may contain resistance-related genes. Integrons have an integrase gene (int). The aim of this work is to report a new integrase gene that was not reported in the GeneBank earlier.

Materials and methods: Susceptible, drug-resistant clinical isolates and H37Rv strain underwent DNA extraction. Integron of *Mycobacterium abscessus* structure was used as a template. The needed primers were designed for a walking method in polymerase chain reaction (PCR). Resulted fragments were sequenced for confirmation of the fragments.

Results: Results of the sequencing method revealed that the newfound integrase is not in the GeneBank and was not reported earlier. Its sequence differed from former reported integrases like PhiRv1 integrase (Rv2659c), RVBD_2646 integrase, Rv2309c, CCDC5180_0965 integrase, Rv2894c, etc.

Conclusion: This study reports a novel integrase. These studies need to be continued for probable relationship between the whole fragment and resistance genes in the bacterium.

* Corresponding author.
E-mail addresses: mmatinam81@yahoo.com, arjomandzadegan@arakmu.ac.ir (M. Arjomand).
http://dx.doi.org/10.1016/j.ijmyco.2014.11.032
2212-5531/